

REMARKS

This Amendment is responsive to the final Office Action mailed on August 23, 2007. Claims 58-60, 79, and 80 are amended. Claims 81-88 are new. Claims 40-88 are pending.

As a preliminary matter, Applicants would like to thank the Examiner for the courteous and productive telephone interview held on November 8, 2007, the details of which are set forth below.

Claims 40, 59, 60, 79, and 80 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description. Claims 40, 59, 60, 79, and 80 are also rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Based on comments presented during the telephone interview as discussed in detail below, the Examiner agreed to withdraw these section 112 rejections.

Claims 40, 41, 43-52, 55, 57-72 and 78-80 are rejected under 35 U.S.C. § 102(b) as being anticipated by Thrash (US 5,801,914).

Claims 42, 53-54, 56, and 73-77 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Thrash in view of Saito (US 6,243,018).

Applicants respectfully traverse these rejections in view of the following comments.

Discussion of Telephone Interview

During the telephone interview conducted on November 8, 2007, Applicants' undersigned counsel discussed the section 112 rejections with the Examiner. In particular, Applicants' counsel pointed out that the "electrical device" added to claim 40 is equivalent to a load, and that the "second terminal" is a ground terminal or ground connection (e.g., to the vehicle body) both of which are mentioned in Applicants' specification, as discussed with the Examiner. The Examiner therefore agreed to withdraw the section 112 rejections.

Applicants' undersigned counsel also discussed the rejections in view of Thrash. Applicants' counsel acknowledged that, for the sake of argument only, the current feed terminal

of Applicants' claim 40 may be seen as being equivalent to the plug 24 of Thrash, the at least one electrical device (i.e., a load) of Applicants' claim 40 may be seen as being equivalent to the heating element 12 of Thrash, and the current delivery terminal of Applicants' claim 40 may be seen as being equivalent to the connector leading to the heating element 12, as shown in the attached marked up version of Figure 1 of Thrash sent to Examiner for discussion during the interview.

Based on the foregoing, Applicants' counsel argued that everything between the plug 24 (current feed terminal) and the connector leading to the heating element 12 (the current delivery terminal) of Thrash should be considered to be the "line arrangement." However, this line arrangement of Thrash does not have a detector element running along the supply line. As discussed at Col. 6, lines 3-6, of Thrash, the conductive fiber 34 of Thrash only runs from point 58 to point 60 of the heating element 12 (Fig. 3). If the heating element 12 of Thrash is equivalent to the load (electrical device) of Applicant's claim 40, then the line running from point 58 to the point between the relay coil 42 and start button 20 of Thrash is not a portion of conductive element of fiber 34. Rather, the conductive element 34 of Thrash that the Examiner has equated with Applicants' detector element is only within the heating element 12 and is not present in the line arrangement connecting the power source to the load.

As discussed with the Examiner, since in Thrash there is no detector element present in the electrical line arrangement of Thrash, Thrash does not disclose or remotely suggest a detector element adapted in such a way that at least one of the optical or electrical properties of the detector element are irreversibly damaged when a local arc originates from one of the current carrying inner conductors, as claimed by Applicants

Further, as discussed with the Examiner, in Thrash there is no isolating circuit connected to the current feed terminal. Rather, in Thrash the isolating element is in the middle of the line arrangement designated on the marked up version of Figure 3 of Thrash forwarded to the Examiner in advance of the telephone interview. Further, the isolating element of Thrash does not

react to a detector element in the line arrangement but rather to a break in the fiber 34 of the load (heating element 12).

The Examiner acknowledged the differences between Applicants' claimed invention and indicated that the claims appeared allowable over Thrash.

The Examiner subsequently telephone Applicants' counsel on November 21, 2007 and indicated that she reviewed the Thrash reference and had now decided to maintain the rejections in view of Thrash. The Examiner indicated that although the detector line 34 runs only within the blanket (load) of Thrash, the description of Thrash at column 2, lines 1-5 teaches that the same device can be used in power cords and wiring. The Examiner also pointed out that the detector device of Thrash was responsive to local arcs at column 7, lines 19-20.

Accordingly, Applicants submit that they agree with the content of the Interview Summary mailed by the Examiner on November 26, 2007 to the extent it indicates that the Examiner agreed that the claims were allowable and subsequently indicated that the rejections in view of Thrash were maintained. However, the Interview Summary fails to acknowledge that the Examiner agreed to withdraw the section 112 rejections.

Discussion of Amended and New Claims

Claim 58 is amended to specify at least one inner conductor so that it is consistent with the language of claim 40.

Claims 59 and 60 are amended into dependent form and now depend from claim 58.

Claims 79 and 80 are amended into dependent form and now depend from claim 40.

New independent claims 81 is based on the subject matter disclosed on page 11, sixth full paragraph and page 23, fourth full paragraph of Applicants' specification.

New independent claims 82 is based on the subject matter disclosed on page 7, first full paragraph and page 22, third full paragraph of Applicants' specification.

New independent claims 83 is based on the subject matter disclosed on page 6, sixth full paragraph of Applicants' specification.

New independent claims 84 is based on the subject matter disclosed in the paragraph bridging pages 25 and 26 and on page 26, second full paragraph of Applicants' specification.

New independent claims 85 is based on the subject matter disclosed on page 8, first full paragraph of Applicants' specification.

New independent claims 86 is based on the subject matter disclosed on page 8, fourth full paragraph of Applicants' specification.

New independent claims 87 is based on the subject matter disclosed on page 21, last full paragraph of Applicants' specification.

New independent claim 88 corresponds to independent claim 40, but is limited only to optical properties of the detector element.

Discussion of Thrash

Claims 40, 41, 43-52, 55, 57-72 and 78-80 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Thrash. This rejection is respectfully traversed. An anticipation rejection requires that each and every element of the claimed invention as set forth in the claim be provided in the cited reference. See *Akamai Technologies Inc. v. Cable & Wireless Internet Services Inc.*, 68 USPQ2d 1186 (CA FC 2003), and cases cited therein. As discussed in detail below, Thrash does not meet the requirements for an anticipation rejection.

As discussed above, the Examiner during the follow-up telephone call on November 21, 2007, subsequent to the telephone interview, indicated that, although the detector line 34 of Thrash runs only within the blanket (load) 10, the description of Thrash at column 2, lines 1-5 teaches that the same device can be used in power cords and wiring.

Applicants respectfully submit that there is no disclosure or suggestion in Thrash of using such a detector line 34 in a line arrangement for an electrical system of a vehicle, as claimed by Applicants. The disclosure of Thrash at column 2, lines 1-5, relied on by the Examiner arguably teaches the use of such a detector line in the internal wiring of loads such as electric blankets, heating pads, and electric motors. Although this section of Thrash does mention use of the device

in wiring circuitry for buildings, Applicants respectfully submit that such a disclosure refers to electrical circuits having wiring therein, and not to electrical supply lines themselves.

Only with hindsight impermissibly gained from Applicants' disclosure could one of ordinary skill in the art have arrived at the conclusions of the Examiner. There is simply no motivation in Thrash to apply the disclosed safety device to a line arrangement for motor vehicles.

The Examiner also pointed out during the follow-up telephone call on November 21, 2007 that the detector device of Thrash was responsive to local arcs and pointed to column 7, lines 19-20 of Thrash for this disclosure. Applicants respectfully submit that the Examiner has taken such disclosure out of context. In particular, Thrash discloses:

In the situation where a short circuit condition occurs between conductors 28 and 30, the current throughout the safety circuit will increase. If the short is severe, the increased current through conductors 28 and 30, if the operating power is not discontinued, may cause heating element 12 to overheat, even to the point where electrical arcing occurs, such that a hazardous condition develops. Fuse 38 of the safety circuit prevents such overheating conditions by opening the circuit, thus discontinuing the operating power, . . . However, in the unlikely event that fuse 38 should happen to malfunction, conductive fiber 34 will prevent a hazardous condition from developing. In the manner described above, fiber 34 will sever, thus discontinuing the operating power, if the temperature of the heating element 12 reaches a dangerously high level due to the short.

Thrash, Col. 7, lines 14-20 (emphasis added).

This portion of Thrash discusses only the condition where a short occurs between the two conductors 28 and 30 of the electric blanket 12. As a result of this short, excessive heating of the entire heating element 12 may occur, leading to electrical arcing. However, it is clear from this portion of Thrash that it is the fuse 38 that prevents such overheating in the event of a short. Further, in the event that the fuse 38 malfunctions, the conductive fiber 34 will sever due to exposure to the heat (See, e.g., Col. 3, lines 8-28 of Thrash which specify that the composition of

fiber 34 is such that it breaks when exposed to high temperatures associated with excessive overheating conditions which cannot be compensated for by the self-limiting nature of the PTC material 26). Thus, there is no disclosure or suggestion in Thrash that the fiber 34 is responsive to local arcs. The portion of Thrash relied on by the Examiner merely indicates that the hazardous condition of an electrical arc may result from the short circuit between conductors 28 and 30 due to excessive overheating caused thereby, but that the fuse 38 should act to prevent such excessive overheating which can lead to the arcing. In the event the fuse 38 fails, the fiber 34 will rupture in response to overheating, thus preventing the hazardous condition of arcing.

In other words, in Thrash, the fiber 34 is arranged and designed to detect overheating in PTC material 26, but is not designed to detect arcing originating from one of the electrical lines.

Accordingly, Thrash does not disclose or remotely suggest a detector element having at least one of an optical property and an electrical property, where changes in the at least one of the optical and electrical properties are detectable by detecting means and where the detector element is adapted in such a way that at least one of the electrical and optical properties are irreversibly changed when a local arc originating from one of the at least one current-carrying inner conductor occurs, as set forth in Applicants' claim 40.

As Thrash does not disclose each and every element of the invention as claimed, the rejections under 35 U.S.C. § 102(b) are believed to be improper, and withdrawal of the rejections is respectfully requested. See, *Akamai Technologies Inc., supra*.

Applicants also respectfully submit that Thrash does not disclose or remotely suggest the features of Applicants' new independent claims. In particular, Thrash does not disclose or remotely suggest:

- At least two detector elements running along a supply line, as claimed in Applicants' new claim 81;
- Two detector elements running along the supply line, each of which comprises a detector line and a carrier strip on which the detector line is held, where the carrier

strips are wound in opposite directions around the supply line, as claimed in Applicants' new claim 82;

- At least two detector elements which run along the supply line and enclose the supply line substantially completely, as set forth in Applicants' new claim 83;
- A detector circuit detecting a change of an electrical property or electrical potential of the detector element, and a corresponding isolating circuit responsive thereto, as set forth in Applicants' new claim 84;
- A detector element comprising a carrier and a detector line, where the carrier is connected to the detector line and deforms and acts on the detector line changing its optical or electrical properties, as set forth in Applicants' new claim 85;
- A detector element comprising a carrier and a detector line, where the carrier is connected to the detector line and exerts mechanical force on the detector line changing its optical or electrical properties, as set forth in Applicants' new claim 86;
- A detector element comprising a carrier and a detector line, where detector line is arranged between the carrier and a cover foil on the carrier, as set forth in Applicants' new claim 87; and
- A detector element which has optical properties, rather than electrical properties, as set forth in Applicants' new claim 88.

Applicants respectfully submit that the present invention is not anticipated by and would not have been obvious to one skilled in the art in view of Thrash, taken alone or in combination with Saito or any of the other prior art of record.

Further remarks regarding the asserted relationship between Applicants' claims and the prior art are not deemed necessary, in view of the foregoing discussion. Applicants' silence as to any of the Examiner's comments is not indicative of an acquiescence to the stated grounds of rejection.

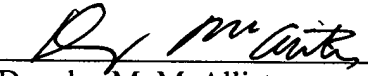
Withdrawal of the rejections under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) is therefore

respectfully requested.

Conclusion

The Examiner is respectfully requested to reconsider this application, allow each of the pending claims and to pass this application on to an early issue. If there are any remaining issues that need to be addressed in order to place this application into condition for allowance, the Examiner is requested to telephone Applicants' undersigned attorney.

Respectfully submitted,



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